UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,242	12/21/2001	Richard S. Judson	2458-4042US2	4987

25106   7590   09/30/2005

GENAISSANCE PHARMACEUTICALS
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EXAMINER
ZEMAN, MARY K

ART UNIT	PAPER NUMBER
1631	

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,69-72 and 120-124* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,69-72 and 120-124* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>21 December 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____ .

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☒ Other: *notice to comply.*

DETAILED ACTION

The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 1631 Examiner Mary K Zeman.

The preliminary amendment filed 12/21/2001 canceled claims 9-68, 73-119, 125-183. Claims 1-8, 69-72 and 120-124 are pending and under examination.

Priority

The petition granted 9/16/2002 converts the instant application from an application filed under 35 USC 371 to am application filed under 35 USC 111(a). the application has been given a filing date of 12/21/01. This application is considered to be a continuation of PCT US00/17540, filed 6/26/00, as it designated the US. This application also claims priority to provisional application 60/141,521, filed 6/25/1999.

The first page of the specification should be amended to reflect Applicant's proper priority claims and the relationships of the various applications.

Inventorship

In view of the papers filed 7/24/04, the inventorship in this nonprovisional application has been changed by the deletion of DENTON, R. Rex, and RUALFIO, Gualberto.

PALM already reflects this change of inventorship.

Compact Disk Submission

The examiner notes that the CD-Rom's referred to in a Notice of Missing Parts were not intended to be part of the specification or disclosure.

Information Disclosure Statement

The IDS statements filed 6/12/03, 7/27/04, 8/18/04 and 10/21/04 have each been entered and considered. The 2 WO documents previously submitted improperly on CD-ROM (WO 00/50639 A2 and 00/50639 A3) do not appear to have been resubmitted in proper format. None

of the other cited WO documents appear to be in the IFW file of this application. Other related applications were probed for the presence of these citations.

Specification

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01. See pages 140, 147.

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth below or on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures. **Applicant was already apprised of this requirement. This will NOT be held in abeyance.**

At least the following sequences require a sequence listing as they are 10 or more nucleotides in length: SPECIFICATION page 60, line 5.

FIGURE 5 (HAP 1-9)

FIGURE 6 (RNA structure)

FIGURE 38 (%FEV pred. :)

Applicant is requested to thoroughly review the specification and figures for sequences meeting the requirements set forth above.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-8 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-8 are drawn to methods of generating a database, which is merely a method of arranging and storing data. This method is non-statutory See MPEP 2106. MPEP 2106: "For such subject matter to be statutory, the claimed process must be limited

to a practical application of the abstract idea or mathematical algorithm in the technological arts. See Alappat, 33 F.3d at 1543, 31USPQ2d at 1556-57 (quoting Diamond v. Diehr, 450 U.S. at 192, 209 USPQ at 10). See also Alappat 33 F.3d at 1569, 31 USPQ2d at 1578-79 (Newman, J., concurring) ("unpatentability of the principle does not defeat patentability of its practical applications") (citing O 'Reilly v. Morse, 56 U.S. (15 How.) at 114-19). A claim is limited to a practical application when the method, as claimed, produces a concrete, tangible and useful result; i.e., the method recites a step or act of producing something that is concrete, tangible and useful. See AT &T, 172 F.3d at 1358, 50 USPQ2d at 1452. Likewise, a machine claim is statutory when the machine, as claimed, produces a concrete, tangible and useful result (as in State Street, 149 F.3d at 1373, 47 USPQ2d at 1601) and/or when a specific machine is being claimed (as in Alappat, 33 F.3d at 1544, 31 USPQ2d at 1557 (in banc)." ...Examples of claimed processes that do **not** achieve a practical application include:

- step of "updating alarm limits" found to constitute changing the number value of a variable to represent the result of the calculation (Parker v. Flook, 437 U.S. 584, 585, 198 USPQ 193, 195 (1978)); - final step of "equating" the process outputs to the values of the last set of process inputs found to constitute storing the result of calculations (In re Gelnovatch, 595 F.2d 32, 41 n.7, 201 USPQ 136, 145 n.7 (CCPA 1979); and - step of "transmitting electrical signals representing" the result of calculations (In re De Castelet, 562 F.2d 1236, 1244, 195 USPQ 439, 446 (CCPA 1977) ("That the computer is instructed to transmit electrical signals, representing the results of its calculations, does not constitute the type of post solution activity' found in Flook, [437 U.S. 584, 198 USPQ 193 (1978)], and does not transform the claim into one for a process merely using an algorithm. The final transmitting step constitutes nothing more than reading out the result of the calculations.")); and -step of displaying a calculation as a gray code scale (In re Abele, 684 F.2d 902, 908, 214 USPQ 682, 687 (CCPA 1982)).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8, 69-73 and 120-124 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the notation "1) (b)" is confusing, as there is no "2)". This appears to be a formatting or typographical error.

Further in claim 1 the metes and bounds of the "generating" step are unclear. It is unclear if this requires actual sequencing or samples from individuals, or merely retrieval of this information from another source. Further, it is unclear what polymorphism and haplotype data would be "representative" of the individual's haplotypes and genotypes. Further in claim 1, no spatial relationship information: so the organization "according to the spatial relationships" cannot be performed.

Claim 3 lacks antecedent basis in claims 1 and 2. Neither claim 1 nor claim 2 recite a "deriving step". Therefore, the modifications of "the deriving step" set forth in claim 3 lack antecedent basis.

It is unclear where the limitations of claim 4 should be added to the method of claims 1 and/ or 2. Does deriving the haplotype information happen before or after generating the polymorphism and haplotype data of claim 1? Does the "determining" step of claim 4 require actual sequencing of a sample from an individual, or merely require retrieval of the sequence from another source? The limitation of step (e) does not actually require storage of the information.

The metes and bounds of claim 69 are unclear. The database recited in the preamble is does not comprise all the information which must be accessed by the listed types of code. The database in the preamble comprises "haplotype information for a gene or gene feature of interest" which does not comprise information for "all possible haplotype pairs"; it does not comprise "genotypes"; it does not comprise "observed distributions". Therefore, the claim as written appears inoperable. Claim 120 has similar problems.

The term "most probable" in claim 69 (and 120) is a relative term which renders the claim indefinite. The term "most probable" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The metes and bounds of the term "effects imposed by the presence of a limited number of individuals in the population" in claim 70 and 121 are unclear. What are these effects, and how does the computer correct for them?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8, 69-72, 120-124 are rejected under 35 U.S.C. 102(b) as being anticipated by Nowacki et al. (Jan, 1998).

The claims are drawn to methods of generating a database, a computer program for generating a database, and a computer system.

Nowacki et al. (Nowacki, P. M. et al. PAH Mutation analysis Consortium Database. Nucleic Acids Research (Jan 1, 1998) Vol. 26 No. 1 pages 220-225) disclose methods of generating a database comprising haplotype information. The database is comprised of haplotype information, linked to phenotype information, and can be stratified by sex, ethnicity, location, disease, etc. The haplotype information is related to the PAH gene locus, and may contain related alleles, mutations, phenotypes, and references The polymorphisms can be analyzed according to the H-W equilibrium equations, as well as other standard genetic analysis techniques. The sequences/haplotypes/ genotypes are also tested for Mendelian inheritance patterns, as is it linked to OMIM. Programmed computers, and software are specifically disclosed. As such, this reference anticipates the claims.

Claims 1-8, 69-72 and 120-124 are rejected under 35 U.S.C. 102(a and e) as being anticipated by Lincoln et al. (5,762,876).

Lincoln et al. (US Patent 5,762,876) disclose methods and programmed computers for determining the haplotype of a sample and generating an associated database. The database comprises haplotype information of one or more locus per sample. The database can comprise desired information linked to the haplotype. The incidence of the polymorphisms can be analyzed by a variety of standard statistical techniques. Programmed computers and software are specifically disclosed. As such, this reference anticipates the claims.

Claims 1-8, 69-72 and 120-124 are rejected under 35 U.S.C. 102(e) as being anticipated by Ruano et al. (US 5,972,614).

Ruano et al. (US Pat 5,972,614) disclose methods and programmed computers for determining the haplotype of multiple samples from a selected population and generating an associated database. The database comprises haplotype information of one or more locus per sample. The database can comprise desired information linked to the haplotype. The incidence of the polymorphisms can be analyzed by a variety of standard statistical techniques. Programmed computers and software are specifically disclosed. As such, this reference anticipates the claims.

The applied reference has a common ASSIGNEE with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claims 1-8, 69-72 and 120-124 are rejected under 35 U.S.C. 102(e) as being anticipated by Poirier (US 6,022,683).

Poirier (US 6,022,683) disclose methods and programmed computers for determining the haplotype of a sample and generating an associated database. The database comprises haplotype information of one or more locus per sample. The database can comprise desired information

linked to the haplotype. Specifically, the database links possible disease outcome with haplotypes of ApoE. The incidence of the polymorphisms can be analyzed by a variety of standard statistical techniques. Programmed computers and software are specifically disclosed. As such, this reference anticipates the claims.

Claims 1-8, 69-72 and 120-124 are rejected under 35 U.S.C. 102(e) as being anticipated by Jeffreys et al (US 5,853,989).

Jeffreys et al. (US Pat 5,853,989) disclose methods and programmed computers for determining the haplotype of a sample and generating an associated database. The database comprises haplotype information of one or more locus per sample. The database can comprise desired information linked to the haplotype. Forensic and paternity type information is linked to the haplotypes. The incidence of the polymorphisms can be analyzed by a variety of standard statistical techniques. Programmed computers and software are specifically disclosed. As such, this reference anticipates the claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary K Zeman whose telephone number is (571) 272 0723

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel, PhD can be reached on (571) 272 0718. The fax phone number for the organization where this application or proceeding is assigned is 571 273 8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system

provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

     For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

MARY K. ZEMAN
PRIMARY EXAMINER

NOTICE TO COMPLY WITH SEQUENCE RULES	Application No.	Applicant(s)	
	10/019,242	JUDSON ET AL.	
	Examiner	Art Unit	
	Mary K. Zeman	1631	

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 CFR 1.821-1.825 for the following reasons:

☒ 1. This application clearly fails to comply with the requirements of 37 CFR 1.821-1.825. Applicant's attention is directed to these regulations, published at 1114 OG 29, May 15, 1990 and at 55 FR 18230, May 1, 1990.

☒ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 CFR 1.821(c).

☒ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 CFR 1.821(e).

☐ 4. A copy of the "Sequence Listing in computer readable form has been submitted. However the content of the computer readable form does not comply with the requirements of 37 CFR 1.822 and/or 1.823, as indicated on the attached copy of the marked up "Raw Sequence Listing".

☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable. A Substitute computer readable form must be submitted as required by 37 CFR 1.825(d).

☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable form of the "Sequence Listing" as required by 37 CFR 1.821(e).

☐ 7. Other:

Applicant must provide:

☒ An initial or ☐ A substitute computer readable form copy of the Sequence Listing.

☒ An initial or ☐ A Substitute paper copy of the Sequence Listing as well as an amendment directing its entry into the specification.

☒ A statement that the content of the paper and computer readable copies are the same, and, where applicable, include no new matter, as required by 37 CFR 1.821(e), (f), or (g) or 1.825(b) or (d).

FOR QUESTIONS PLEASE CONTACT:

Rules Interpretation (703) 308-4216
CRF Submission Help (703) 308 4212
PatentIn software help (703) 308 6856

PLEASE RETURN A COPY OF THIS NOTICE WITH YOUR RESPONSE